

FIG.1

Atmospher 7	Atmospheric environment	ment	ı		п		Ħ		≥		>	
Fovironme	Environmental factors	<u></u>	Measured	Evaluation	Measured	Evaluation Measured	Measured	Evaluation	Measured	Evaluation Measured Evaluation Measured Evaluation	Measured	Evaluation
- 5			value	point	value		value	point	value	point	value	point
Temperature(°C)	(°C)	V	≥20		≥25	2	≥30	4	≥35	8	>35	12
Relative humidity	umidity	8	09⋝	1	≥65	9	570	12	08∀	24	08<	36
(%RH)												
(e)	SO ₃ SO ₂	\mathcal{S}	≦0.02	1	≤0.05	4	≤0.2	8	≦0.5	16	>0.5	24
gas	H ₂ S	C2	<u> </u>		≥0.05	9	≦0.2	12	≦0.5	24	>0.5	36
(ppm)	NO2	ဌ	≤0.02		≥0.05	3	≦0.2	9	≥0.5	12	>0.5	18
_	<u>-</u> :	7	≤0.02	-	≦0.05	7	≦0.2	14	≤0.5	28	>0.5	42
_	NH3	C5		-	≦0.1	3	≦1.0	9	≦10	12	>10	18
Sea salt	Sea salt		≥0.01		€0.03	5	≦0.1	10	€0.3	20	>0.3	30
particle	particle										.78	
_	Distance	٥	>2.0		≥1.5		≥1.0		≥0.5		<0.5	
	from											
-	coast											
	(km)											

Q. S L

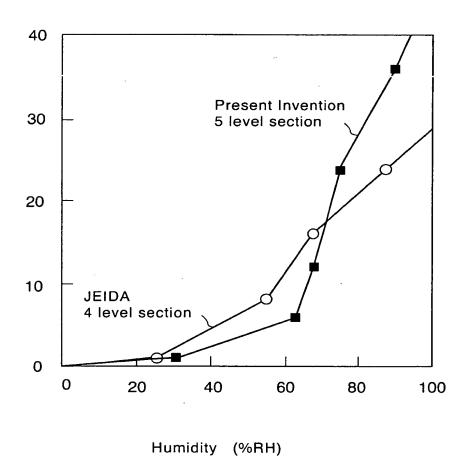


FIG.3

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JEIDA-29-1990 Dividing into four stage classes

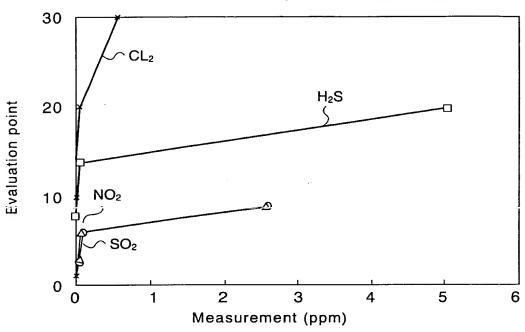


FIG.4A

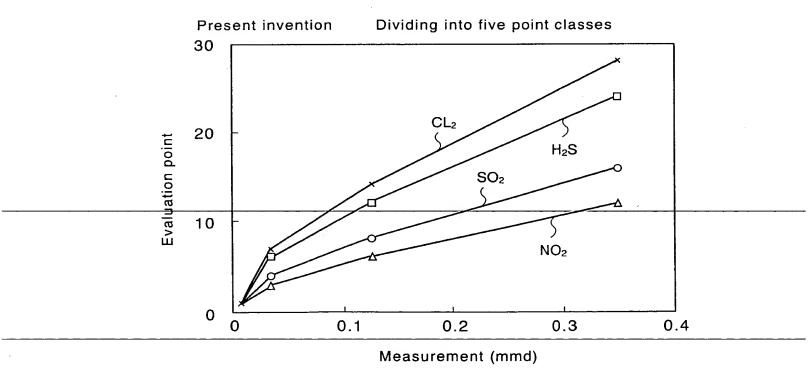


FIG.4B

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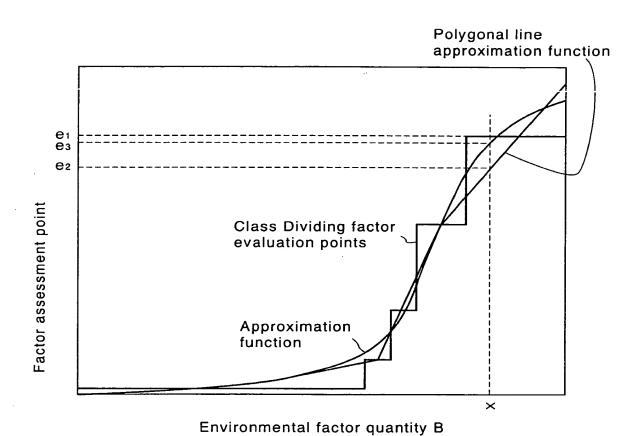
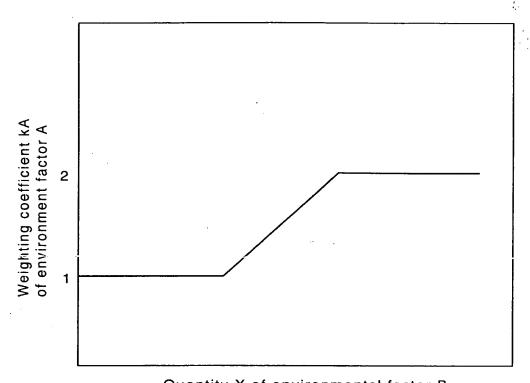
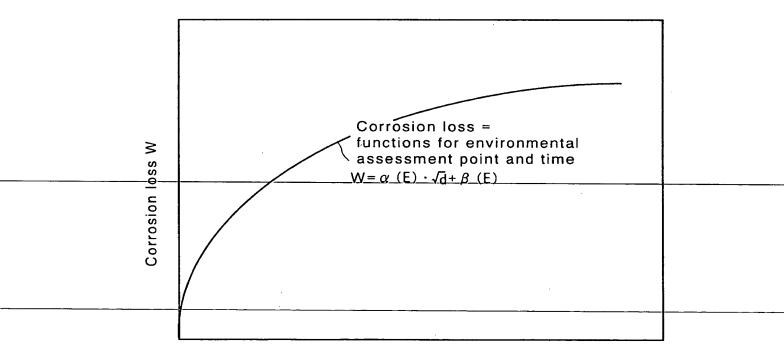


FIG.5

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Quantity X of environmental factor B



Time d

FIG.7

Maximum function value of corrosion loss of metallic material prediction function represented by function for environmental assessment points and time

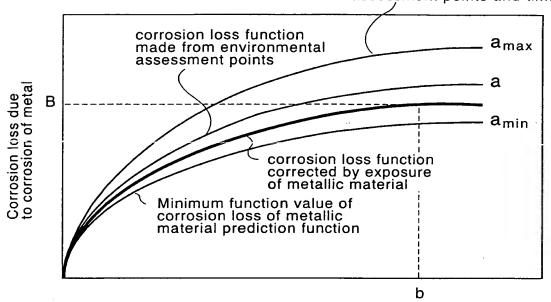


FIG.8

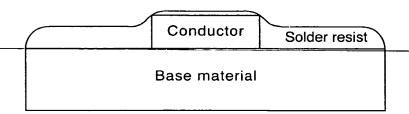


FIG.9

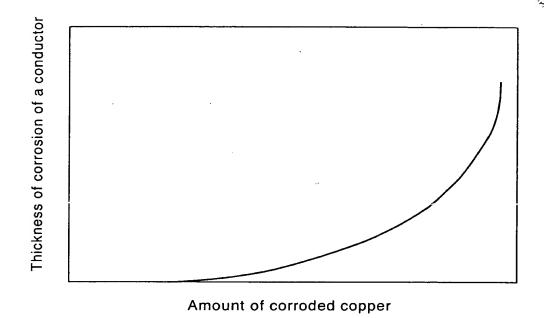


FIG.10A

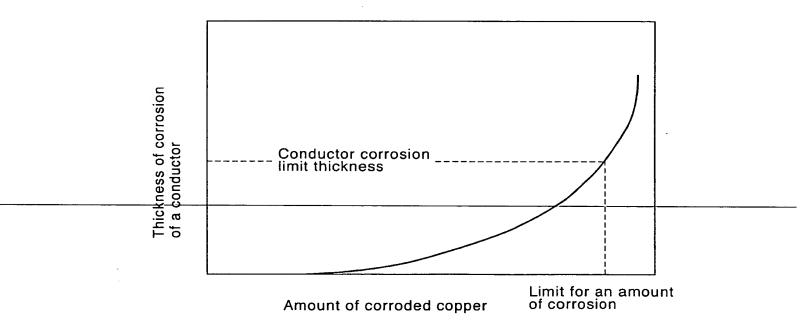
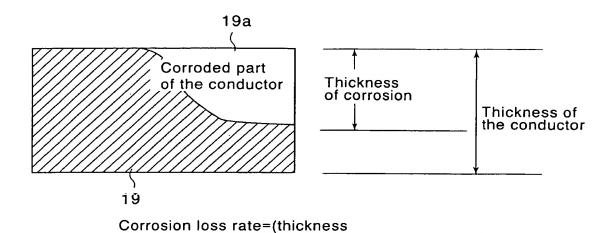


FIG.10B

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of corrosion/thickness of the conductor) \times 100 FIG.11

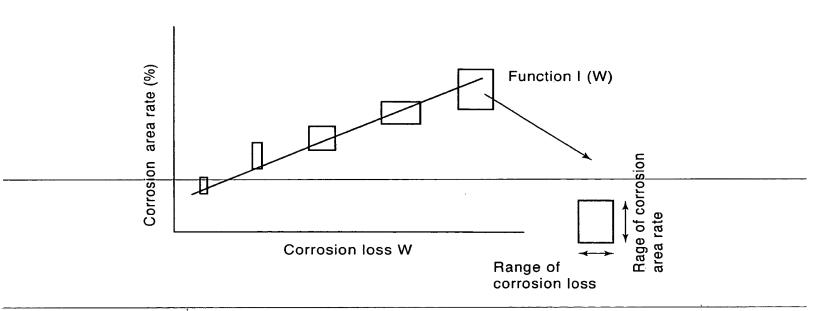


FIG.12

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Manufacturer Sealing resin Chip protective film Other Correlation function(W)	l ₁ (W)	l2(W)	l3(W)
Other			
Chip protective film	PSG	None	SiN
Sealing resin	Epoxy blend	Epoxy blend	Epoxy blend
Manufacturer	T Inc.	N Inc.	T Inc.
Year	1982	1979	IC3 1992
IC type Year	IC1 1982	IC2 1979	103

<u>-1</u>G.13

RLON SPIVAK, et al. RIAL NO: 09/774,621 INV: Katsumi KANEHIRA, et al. DOCKET # 202686US-2TTC SHEET 11 OF 18

		:	:	:	<u>:</u>	:
U ₃ =m ₃ (t),F ₃ =n ₃ (u)		Nio Nio	polyimide blend	H Inc.	IC3 1992	103
$U_2=m_2(t),F_2=n_2(u)$		None	Epoxy blend	N Inc.	1979	IC2
U ₁ =m ₁ (t),F ₁ =n ₁ (u)		PSG	Epoxy blend	T Inc.	IC1 1982	IC1
Correlation function F(u) of aluminium wiring corrosion area rate and faults						3,60
Change of time sequence of aluminium wiring corrosion area rate Ui = hi(t)	Other	Chip protective Other	Sealing	IC Year Manufacturer type	Year	C type
Change of time sequence of aluminium wiring corrosion	Other	Chip protective	Sealing	Manufacturer	Year	<u>ပ</u>

FIG.14

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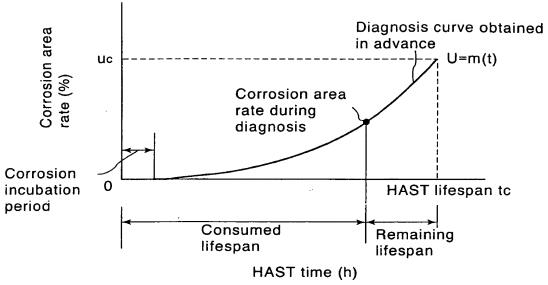
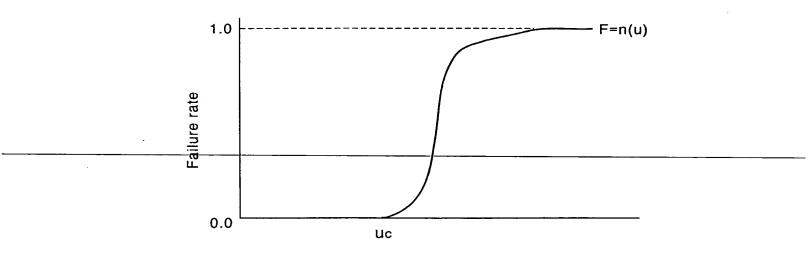


FIG.15



Corrosion area average rate (%)

FIG.16

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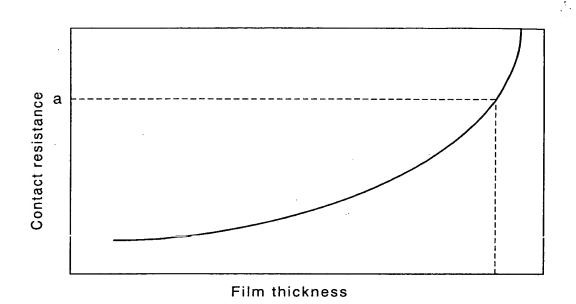


FIG.17

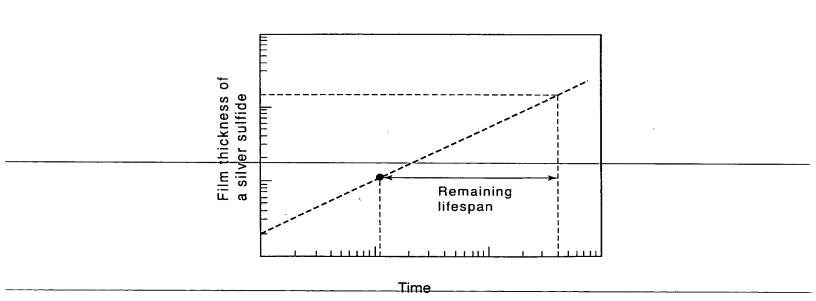


FIG.18

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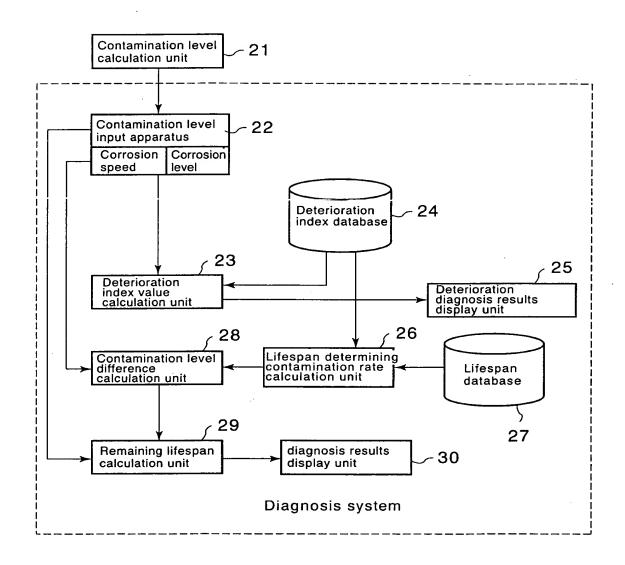


FIG.19

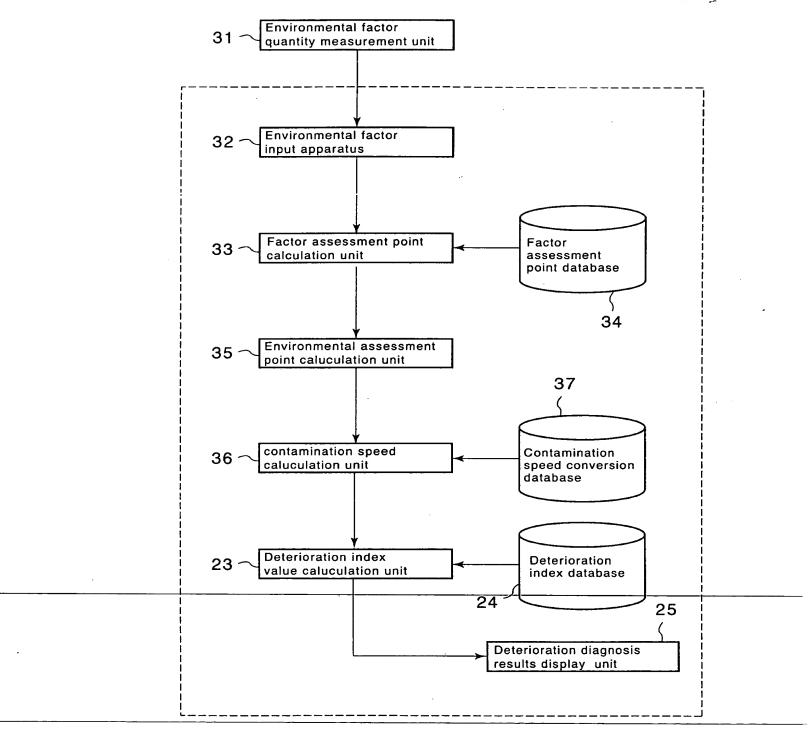


FIG.20

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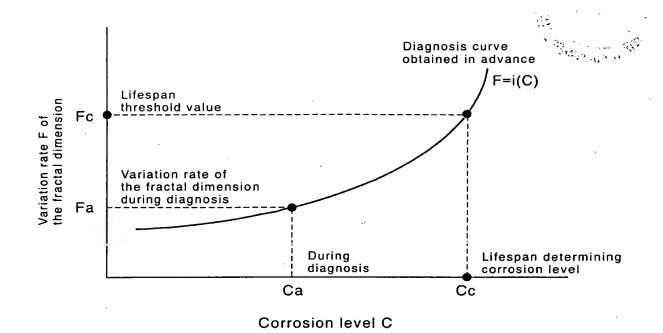


FIG.21

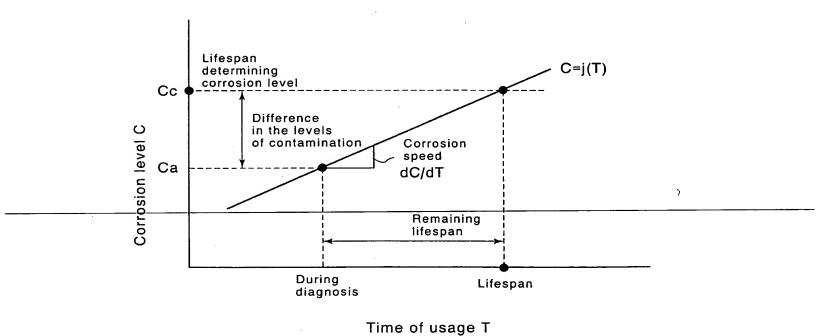


FIG.22

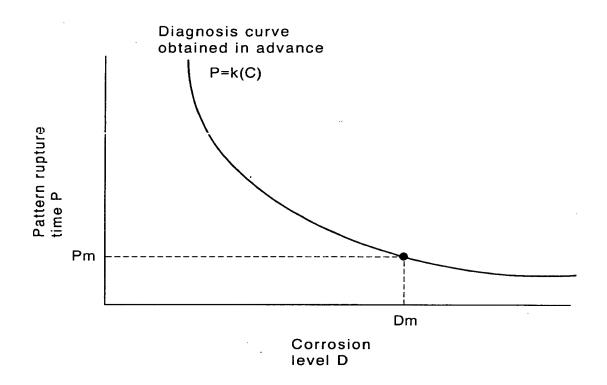


FIG.23

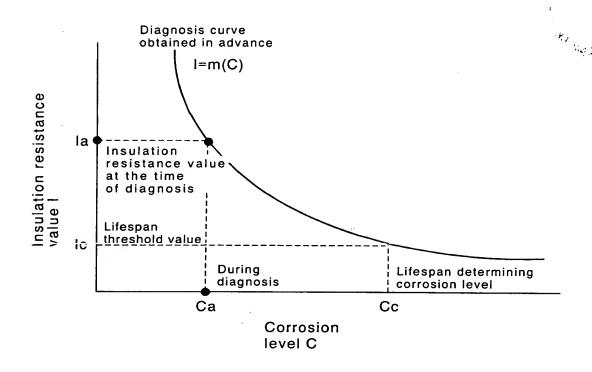
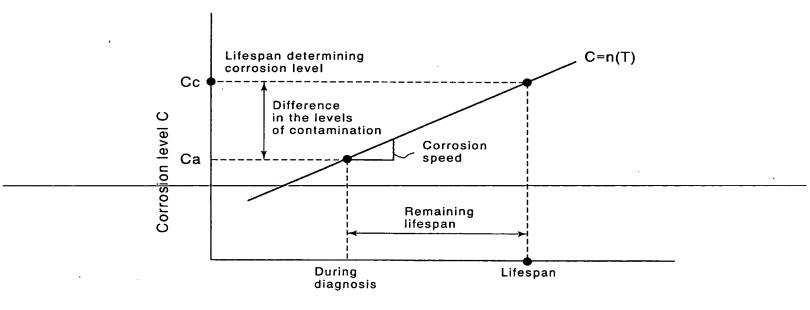


FIG.24



Time of usage T

FIG.25